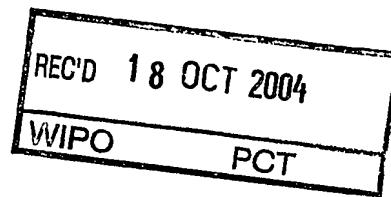


PCT/NZ2004/000213



CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 10 September 2003 with an application for Letters Patent number 528138 made by FLETCHER BUILDING HOLDINGS LIMITED.

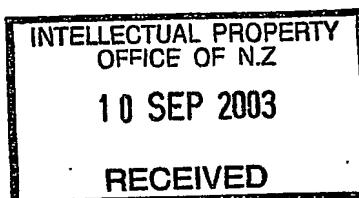
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Commissioner of Patents, Trade Marks and Designs



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Patents Form No. 4

Our Ref: MH504545

Patents Act 1953

PROVISIONAL SPECIFICATION

FRAMING SYSTEM AND COMPONENTS THEREFOR

We, **FLETCHER BUILDING HOLDINGS LIMITED**, a New Zealand company, of
810 Great South Road, Penrose, Auckland New Zealand do hereby declare this
invention to be described in the following statement:

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FRAMING SYSTEM AND COMPONENTS THEREFOR

Background of the Invention

5 The present invention relates to a framing system and components therefor and more especially but not exclusively to a timber wall system having sound attenuating properties.

10 To the present time various proposals have been put forward to achieve sound attenuation in building constructions. Building regulations in many countries including New Zealand specify the sound attenuation properties required in buildings. These are now being vigorously enforced in many countries, particularly with the popularity of apartment blocks where a high level of sound attenuation is required between adjacent 15 apartments. Typically in New Zealand a Sound Transmission Class (STC) of 55 may be specified for inter-tenancy walls.

20 Various proposals have been put forward in respect of building materials and/or building components to achieve required levels of STC.

Objects of the Invention

25 The present invention seeks to provide a framing system and components therefor which will enable appropriate sound attenuation in buildings in an effective manner and/or will at least provide the public with a useful choice.

30 Further objects of this invention will become apparent from the following description.

Summary of the Invention

35 According to one aspect of the present invention there is provided a plate for use in a sound attenuating building construction, said plate having first and second spaced apart flanges, each flange being adapted for securing in use to a respective element of said building construction, a resilient connection means extending between adjacent edges of said flanges.

According to a further aspect of the present invention there is provided a building frame including at least a pair of spaced apart frame elements required to be connected together, at least one plate having first and second spaced apart flanges, each flange being secured to a respective said element, a resilient connection means extending between said flanges to space apart said elements, the arrangement being such that sound acting directly or indirectly on said elements will result in movement of said resilient connection means to provide sound attenuation characteristics for a building construction in which said frame is incorporated.

10 Preferably the abovementioned resilient connection means is substantially U-shaped.

Preferably each of said flanges is provided with a plurality of upstanding nails.

Alternatively each of said flanges is provided with a plurality of nail holes.

15 Preferably each of said flanges adjacent said connection means is provided with respective upstanding location means for positioning the plate relative to the elements.

20 According to a further aspect of the present invention there is provided a plate and/or a building frame substantially as herein described with reference to the accompanying drawings.

25 Further aspects of this invention which should be considered in all its novel aspects will become apparent from the following description given by way of example of possible embodiments thereof and in which reference is made to the accompanying drawings.

Brief Description of the Drawings

30 Figure 1: Shows very diagrammatically part of a building frame according to one possible embodiment of the invention;

Figure 2: Shows a plan perspective view of a plate according to one possible embodiment of the invention.

Brief Description of Possible Embodiments of the Invention

As previously mentioned, the present invention seeks to provide sound attenuation in a building construction such as a wall system.

5

In Figure 1 a pair of timber studs 1 are shown as part of a wall system by way of example only.

10 Connected to and spacing apart the studs 1 is shown by way of example only a pair of plates 2 according to one possible embodiment of the invention:

15 Each plate 2 is shown in one embodiment in greater detail in Figure 2. The plates 2 are shown provided with a pair of flanges 3 connected between adjacent edges 4 by a resilient connection means 5. The flanges 3 may be provided with a plurality of pre-punched nail spikes 6 as shown particularly in Figure 2. Alternatively the flanges 3 could

be provided with nail holes 7 such as shown diagrammatically in Figure 1.

20 The flanges 3 may also preferably include respective location means 8 which may include upstanding projections such as shown particularly in Figure 2 which in use will facilitate the positioning of the plate 2 relative to the adjacent surfaces of the studs 1.

25 The resilient connection means 5 is shown having a substantially "U-shape" in this example and this is formed by spaced apart surfaces 9 which can move relative one with the other in a spring action about their connecting edge 10.

30 The present invention will therefore utilise the mass-spring-mass principles of sound attenuation as the plates 2 in a building frame will react to sound impacting on the construction elements connected with the studs or the like 1.

35 In experimentation it has been found that a construction using the present invention may achieve improved STC ratings of the order of 7dB over single timber frame systems.

Typically the plates 2 may be fitted at approximately 600mm centres on alternate sides of studs or the like 1 and top and bottom plates.

35

It is envisaged that the plates 2 may be fitted by machine as is known in the manufacture of roof trusses for example. Alternatively it is envisaged that the plates 2 may be secured by hand.

5 Typically it is envisaged that the studs 1 may in one use be part of a wall system incorporating wall boards such as gypsum wall boards.

10 The applicant believes that the present invention is unique in that it will be able to make use of a smaller profile of timber to replicate a double stud system while still maintaining structural integrity. In doing so it is envisaged that it will take up less floor space and may be able to be pre-assembled and form part or the entirety of a pre-cut or pre-nailed frame.

15 It is envisaged that in a typical timber construction the studs 1 may generally be of the order of 50mm x 50mm although larger sizes may be used where structural loadings require this.

It is emphasised however that the flanges 3 may be adapted as required for the plates 2 to be used in other than timber constructions, e.g. in steel framed constructions.

20 Where in the foregoing description, reference has been made to specific components or integers of the invention having known equivalents then such equivalents are herein incorporated as if individually set forth.

25 Although this invention has been described by way of example and with reference to possible embodiments thereof, it is to be understood that modifications or improvements may be made thereto without departing from the scope or spirit of the invention.

FLETCHER BUILDING HOLDINGS LIMITED

30 by its Attorneys

BALDWIN SHELSTON WATERS

35 PSPEC3785840

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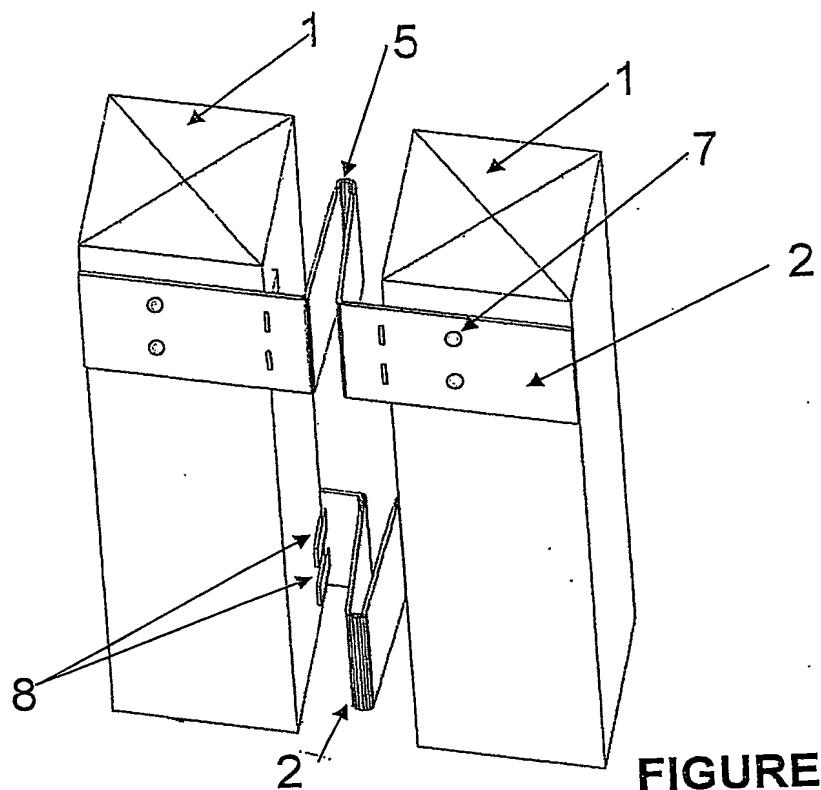


FIGURE 1

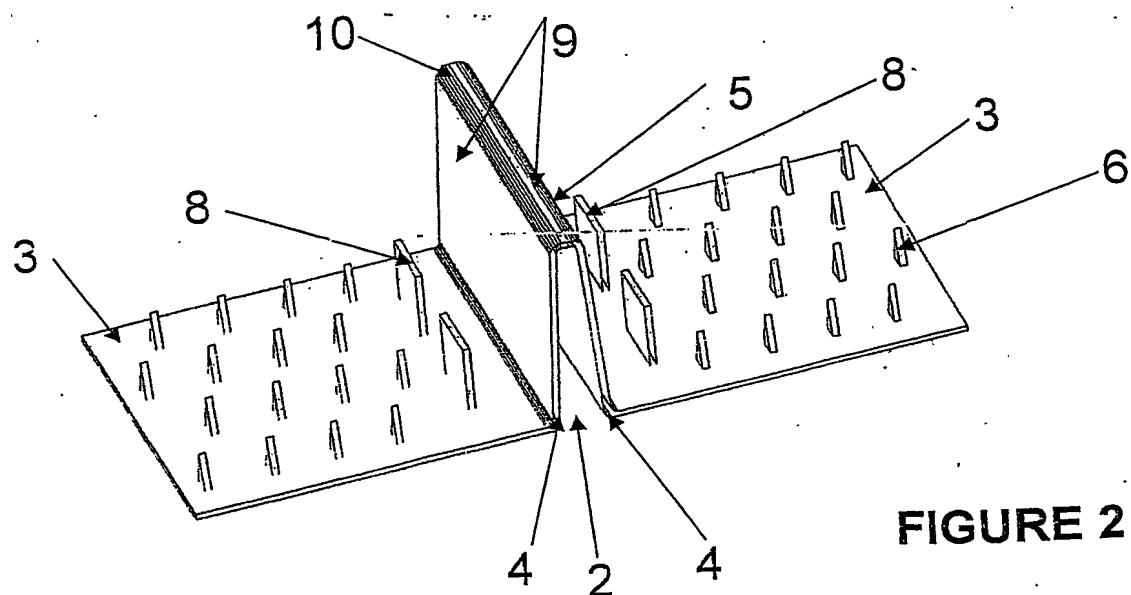


FIGURE 2